Claims:

1. A process for winding a continuously supplied band (5) onto a bobbin (2), with the bobbin (2) being rotated and the band (5) being reciprocated along the entire length of the bobbin (2) at a winding angle (α) by means of a cross-winding device (4), wherein each time the bobbin diameter has increased by a particular value, the winding ratio, i.e. the ratio between the number of bobbin rotations and the reciprocating motion (to-and-fro stroke) of the cross-winding device, is changed in steps, characterized in that the winding ratio is changed stepwisely in essentially integral steps.

2. A winding process according to claim 1, characterized in that, with each change in the winding ratio, the post-decimal point part of said ratio is changed to such a degree that a constant partial overlap with an underlying band track will result.

3. A winding process according to claim 1 or 2, characterized in that the post-decimal point part of the winding ratio is at least two-digit and preferably is close to 0 or 0.50 or 0.33 or 0.25.

4. A winding process according to any of claims 1 to 3, characterized in that the winding ratio is changed such that a forward or backward-moving band winding is created.

5. A winding process according to any of claims 1 to 4, characterized in that the winding ratio is changed such that the resulting winding angle (α) will stay within a predetermined band width.

6. A winding process according to any of claims 1 to 5, characterized in that the bobbin (2) is driven by a separate motor (M1) and the cross-winding device (4) is also driven by a separate motor (M2) and the change in the winding ratio is performed electronically by stepwisely changing the ratio of the speeds of the two motors.

7. A winding process according to claim 6, characterized in that the motors (M1, M2) are rotary-current drives with frequency converters or direct-current drives.

8. A winding process according to any of the preceding claims, characterized in that the instantaneous bobbin diameter is calculated from a variance comparison of the linear band speed and the number of bobbin rotations.

9. A winding process according to claim 2, characterized in that an axial shift d to the extent of the desired constant partial overlap is selected and the winding ratio is calculated from the following formula:

$$\mathbf{V} = \frac{n_a \times 2L \times (V_z + 1/n_a)}{n_a \times 2L - d}$$

wherein the following applies:

V	=	winding ratio (f.i. rounded to four decimal places)
Vz	=	winding-ratio number (integral, selected pre-decimal point part of winding ratio **V**)
na	=	tie number (integral, number of to-and-fro strokes at which the defined shift **d** is supposed to occur)
L	=	winding length of the bobbin in mm (2**L** → to-and-fro stroke)
d	=	shift in mm (along the winding axis)

10. A winding process according to claim 9, characterized in that, depending on the winding angle (α), the n shift d is selected such that an overlap of bands of appx. ½ a bandlet width b emerges.